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AUTHOR Solmon, Lewis C.; Ochsner, Nancy
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ABSTRACT

The attitudes and behaviors of college graduates several years after graduation and the changes in their attitudes from their freshman year (1970) until the time of a followup survey (1977) were studied. The following areas were covered with the 9,000 respondents: life goals, religious preferences, how the college graduates spend their time, voting behavior and political attitudes, satisfaction with quality of leisure, and feelings about work and its relationship to other aspects of life. Among the findings are the following: life goals that reflect altruism and political interest declined most in importance, whereas business-related goals grew most in importance; men had more leisure time than women; professional majors had the least leisure time of all the majors; and the most popular leisure activities were spending time with family, engaging in hobbies, sports (for men), and reading. A strong positive association appeared between job satisfaction and satisfaction with leisure. Humanities graduates had the lowest job satisfaction and the lowest satisfaction with life in general. Shifts in political attitudes varied by field, and declines in religious preferences were greatest in the Christian religions. (SW)

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NEW FINDINGS ON THE EFFECTS OF COLLEGE

Lewis C. Solmon
and Nancy Ochsner

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NEW FINDINGS ON THE EFFECTS OF COLLEGE

Lewis C. Solmon and Nancy L. Ochsner

Although research abounds on the job-related outcomes of the college experience, there is less systematic evidence on the non work-related outcomes, such as personality and attitudinal changes. This paper examines the attitudes and behaviors of college graduates several years after graduation and the changes in their attitudes from their freshman year (1970) until the time of a follow-up survey (1977).*

All respondents were part of the 1970 freshman survey of the Cooperative Institutional Research Program, sponsored by the American Council on Education and the University of California, Los Angeles. Roughly 28,000 of the almost 200,000 respondents to the freshman survey were resurveyed in 1977. After two and sometimes three follow-ups, 9,000 responses were received, a relatively low rate due to the fact that we oversampled low-responding groups (blacks, those in two-year colleges) and the addresses were often seven years old. In any case, the number of non-whites in the sample was too small to include in this analysis, which deals only with whites, recipients of the bachelor's degree, and those not presently enrolled in college. We have determined that these respondents are quite representative of the national population of white BA recipients (Solmon, Bisconti, and Ochsner 1977).

We present several types of data. In some cases, 1977 responses by field and sex are presented without comparisons because we do not have predata on the same subject or data on national samples of comparable noncollege attenders. In other cases, 1977 data are compared with national figures from other sources. In certain cases, we make pre/post comparisons for questions asked both in 1970 and 1977. These comparisons provide an initial assessment of a college's role in molding various dimensions of an individual's life and provide insights into graduates' nonworking lives. A few statistics on college career-related outcomes for the sample provide a sense of the full range of college impacts.

LIFE GOALS OF COLLEGE GRADUATES

One measure of a person's values and aspirations is stated life goals. Do a person's life goals change over time? Does college influence the life goals of its clients? A recent study of a nationally representative sample of college students (Astin 1977) found a general decline in student values from the freshman to the senior year.** The largest declines occur in business interests and status needs. Scores for women decline much more than scores for men. Although the general decline from pretest to posttest is in part maturational, Astin explained, college attendance and persistence may slow the "lowering of horizons" that occurs after high school (p. 53).

In this study, we compare the stated life goals of the respondents when they were freshmen and again after they graduated. Table 1 shows the preportions of individuals in eight major fields who reported each life goal as "very important" or "essential" in 1970 (as freshmen) and again in 1977 (two or three years after graduation). Unlike the study of 1966 and 1967 cohorts (Astin 1977), the largest declines for this 1970 cohort are not in business interests and status needs, but in altruism and political interest. Although status needs show some decline (for "becoming an authority in field" but not for "obtaining recognition for colleagues"), business interests actually increase in importance.

There could be several reasons for the differences between our study and Astin's: (1) Astin weighted the responses to reflect those of the nation's college students, while we did not. We used only the responses of white BA recipients, whereas Astin included all college attenders. Therefore, there are differences in the composition of the samples. (2) There are also differences in survey times. Astin surveyed the respondents when they were freshmen and again when they were

*For some methodological considerations for evaluating college impact, refer to the Appendix.

**Astin looked at two cohorts: 1966-1970 and 1967-1971.

seniors. We surveyed the respondents when they were freshmen and again two to three years after they graduated. Most of the respondents in our sample were employed at that time and may have been "hardened" by work experiences. Perhaps, unlike the evidence for the persistence of knowledge (Hyman et al. 1975), the effects of college on values and life goals do not endure long after graduation. (3) Finally, Astin surveyed 1966 and 1967 freshmen, whereas we surveyed 1970 freshmen. Perhaps there was a change in the *Zeitgeist* from the 1960's to the 1970's, away from altruism and toward business interest and status needs for the society at large. We believe the second and third reasons are most plausible.

Differences by major are shown in Table 2. The most important goals for English majors in 1977 are developing a meaningful philosophy of life (79.1 percent), having an active social life (49.1 percent), and writing original works (45.9 percent). The goals declining in popularity by the largest number of percentage points are participating in the Peach Corps, Vista, and so on (-25.1 percent), keeping up to date with political affairs (-23.4 percent), having friends with different backgrounds (-22.5 percent), raising a family (-22.5 percent), and helping others in difficulty (-22.2 percent). Following the trend for the total sample, social consciousness for English majors seems to decline significantly. Being very well-off financially (11.7 percent), being successful in one's own business (14.9 percent), and never being obligated to people (10.8 percent) are the goals that increase most in popularity. The pattern for foreign-language majors resembles the pattern for English majors, except that helping others in difficulty (50 percent) is one of their three most important goals. For history majors, keeping up with political affairs ranks among the top three goals (56.9 percent). The same trends in the changing relative importance of goals are evident. For other humanities majors, becoming an authority (58.9 percent), obtaining recognition (57.2 percent), creating artistic work (57.7 percent), and developing a meaningful philosophy of life (81.7 percent) are the most important goals. The increasing importance of career-related goals and the declining interest in altruistic goals characterize the humanities just as they do the total sample.

This study gives little support to the assumption that humanities training is characterized by great social responsibility and little materialistic or status interest. Indeed, changing career-goal patterns in the humanities are quite similar to changes exhibited in other fields. The leading goals of social science majors are similar to those of humanities majors (developing a philosophy of life, 76.7 percent; having an active social life, 58.8 percent; and helping others, 57.4 percent).

Developing a philosophy of life is listed as the most popular goal in all fields. The next two most popular goals for hard-science majors are social life (49.7 percent) and becoming an authority (47.0 percent); for business majors, being very well off financially (63.8 percent) and becoming an authority (56.5 percent); and for education majors, helping others (57.7 percent) and raising a family (57.8 percent). Certainly, there is little evidence that life goals of college graduates differ substantially by major.

RELIGIOUS PREFERENCES

Many researchers (Astin 1977; Bowen 1977; Feldman and Newcomb 1969; Gurin 1971) agree that college experience is strongly associated with an increase in liberal religious beliefs and a decline in conventional religious preferences. Table 3 compares respondents' stated religious preferences when they were freshmen in 1970 and again in 1977. The Protestant religions decline most, from 52.9 percent to 41.9 percent. Social and hard-science graduates, followed by English graduates, are most likely to change from Protestantism to another religion or to none. Jewish freshmen are least likely to change religions. The percentage of Roman Catholics fell from 28.4 percent to 23.2 percent, with the greatest declines appearing for foreign language, history, and social science majors. Humanities and social science majors are apparently most likely to turn away from traditional religions during or soon after college.

Growth is evident only in the "other" (probably Eastern) religions and in the "none" category. Those in the "other" category more than double, from 2.6 percent to 5.4 percent. The greatest increases are for English and social science majors, whereas history majors are the only group to decline. The proportion indicating no religious preference rose from 10.8 percent to 24.5 percent, with humanities and social science majors clearly moving into this category in the greatest numbers.

VOTING BEHAVIOR AND POLITICAL ATTITUDES

Most studies concerned with college impact on students' political preferences show that the more years students attend college, the more liberal they become (Astin 1977; Feldman and Newcomb 1969; Bowen 1977; Gurin 1971). We also know that college graduates exercise their voting privileges more frequently than other eligible voters (Taylor and Wolfe 1971). For example, 65.4 percent of high-school graduates voted in the 1972 Presidential election, whereas 78.8 percent of those with 13 or more years of education voted (*Statistical Abstract* 1976). Consistent with this evidence, our data show that more than three out of four college graduates voted in the last Presidential election (Table 4). History and social science majors are most likely to register to vote, although foreign language majors and those from business and education do so almost as frequently. Greater proportions of history and foreign language majors actually voted in the last Presidential election, but relatively fewer English majors did. Except for history majors, the humanities group was least likely to vote in state and local elections. Whether these data indicate differences in original interest in politics or a growth in interest during college is undetermined.

Table 5 shows considerable difference by field in the respondents' political views when they entered college and three years after graduation. Contrary to most research (Astin 1977; Feldman and Newcomb 1969; Bowen 1977), college students do not necessarily become more liberal. English, business, and education majors actually tend to become more conservative, whereas history majors, in particular, and foreign language and social science majors tend to shift toward liberalism. The modal view in 1970 for all fields, except foreign languages, was middle-of-the road, but by 1977 the view of the largest number of history, other humanities, and social science majors is liberal. The direction of change in political views during the college and early post-college years varies by major field. According to Astin (1977), the amount of change also depends on the type of college attended; selective institutions are associated with greater increases in political liberalism.

How are these general views translated into attitudes about specific political issues? In 1977, respondents were given a list of national issues and asked to what extent federal involvement should be increased or decreased. Table 6 gives the percentage of respondents in each field who say federal involvement should be increased or new crash programs should be initiated. Of course, individual attitudes may be the same as they were before college, so no inference about the *effects* of college can be drawn here. However, the data do reveal current views of recent college graduates. Regardless of field, recent graduates are the most eager proponents of federal involvement in exploring new energy sources, controlling environmental pollution, and preventing crime. Their next most important priorities are finding a cure for cancer, eliminating poverty, and controlling firearms. At the bottom of the list are the space program, national defense, looking after veterans, school desegregation, and controlling the media.

For almost all issues, business graduates respond most conservatively (against government involvement except in space, defense, and paying off the national debt), and humanities graduates, particularly historians, respond most liberally (favoring government intervention). Since business majors become more conservative during college and history majors become more liberal, we can assume that their views on specific issues tend to be polarized during college. Those who view government involvement in social issues as a good thing might point to these results as a positive impact of humanities training. Whether or not their training led them to this belief, it is clear that humanities graduates are concerned with national problems and feel that federal initiatives are a good solution. Of course, the professional graduates' relative lack of desire for federal intervention need not imply that they do not want to solve these problems in other ways.

HOW COLLEGE GRADUATES SPEND THEIR TIME

Respondents to the present survey work 30 to 38 hours per week and spend four to seven hours commuting or traveling. Overall, they average only about three hours per week performing work-related activities at home. Although little variation by sex or field is revealed in time spent on work, more variation occurs in two other types of activities. Participation in leisure activities ranges from 24 hours per week for male English majors to 14 hours per week for female education majors and business majors of both sexes. In most cases, men spend more hours in leisure activities than women. Majors in the professional fields tend to participate in leisure activities less than other

majors. Most graduates spend about nine or ten hours taking care of personal business (banking, car maintenance, shopping, laundry). In almost all cases, women spend more time in these activities than men in the same field. Those spending the least time on personal business are male business and education graduates, whereas female English graduates spend the most time.

Perhaps more interesting is how college graduates spend the 20 hours or so per week that they allocate to leisure-time activities. Do graduates in various fields have different propensities to participate in certain types of leisure activities? Do humanists, for instance, attend cultural events more frequently than business majors or hard scientists? Do college graduates as a group spend their leisure time differently than people who do not attend college? A longitudinal study of college graduates, dropouts, and those who did not attend college indicated that their activities and interests four years after high school are more similar than expected (Trent and Medsker 1968). College graduates, however, are slightly more interested in classical music and more frequently attend art exhibits.

Table 7 was developed from the question, "How frequently do you do each of the following in your leisure time?" The various activities are ranked by the proportion of respondents that indicated they engage in them frequently. With a few exceptions, women are more likely than men to engage in each leisure activity frequently. Both men (64.1 percent) and women (83.8 percent) most frequently spend their leisure time taking care of personal business. Visiting friends and relatives is the second most frequent activity; the meaning of this activity presents an interpretative problem, which is discussed later. The third most frequent activity for men is engaging in their favorite hobbies (51.9 percent), whereas for women it is cooking (60.3 percent), an alternative similar to the highest ranked choice, taking care of personal business. A large proportion of men also participate in sports, read for pleasure, and watch television. Many women engage in their favorite hobbies, read for pleasure, and watch television frequently. Although hobbies rank third for men and fourth for women, a larger share of women than men are involved in them.

Although educators often argue that the college experience instills in graduates an appreciation of culture, greater social responsibility, and a continuing thirst for knowledge, attending cultural events such as movies, plays, concerts, ballets, and museums ranks only eighth for men (29.2 percent) and seventh for women (39.4 percent) in this study. Perhaps more surprising is that very few respondents participate in community meetings, service clubs (Rotary, Kiwanis), children's clubs or school activities (4H, PTA, Scouts, Little League), or other volunteer work. Also at the bottom of the list of leisure activities is attending classes, whether for fun, self-improvement, or career development. A much greater proportion of college graduates read to improve themselves.

Generally, then, these college graduates do not engage in cultural, community, or self-improvement activities as frequently as expected, and they tend to watch television more often than expected. What they watch on television, whether it is news, a ballet, or soap operas, is not known. Others have found that, compared with the less educated population, college graduates spend far less time watching television, but television is still their most popular leisure-time activity (Robinson 1971). However, our respondents do not rank television first.

Humanities majors are more likely to attend cultural events than social or hard-science, business, and education majors. About half the male humanities graduates go to cultural events frequently, whereas only one-third of the male social scientists, one-quarter of the hard scientists,and less than one-fifth of the graduates from professional programs do so. Participation in community activities, service clubs, children's clubs, school activities, or other volunteer work ranks at the bottom of the list regardless of major. Men participate in sports more often than women, particularly men who graduated in business, education, and hard sciences. Other than humanities majors attending cultural events more often and men being more likely than women to participate in sports, there is little variation among majors and between sexes in the ways that college graduates spend their leisure time.

Although the instruments used are not identical, we can compare some responses to our survey with a national Gallup poll (Table 8). Eight leisure activities listed in our survey also appeared in a fall 1977 Gallup survey. The first half of Table 8 ranks responses to the question, "What is your favorite way of spending an evening?" for the national population sample and for various subgroups. Since both the Gallup poll and our survey included other choices than those listed in the table, the rankings pertain only to those items common to both surveys. It must be kept in mind that Gallup asked about "favorite activities," whereas we asked about "frequency of doing things."

The most appropriate Gallup comparison group is the 25-to-29-year-old group. Since this group includes both college graduates and nongraduates, any differences would be smaller than those between our respondents and the 25-to-29-year-olds who did not attend college.

The most frequently favored way of spending an evening by those responding to the Gallup poll is watching television. Our respondents, however, put watching television fifth (men) or fourth (women) out of eight comparable items. College graduates in the Gallup poll were the only group that did not most frequently rank television as their favorite activity. There seems to be strong evidence that those who have attended college are less likely to spend time watching television than those of similar age who did not attend college. Additionally, college graduates from most fields tend to spend more time reading for pleasure than the national sample of 25-to-29-year-olds. This is particularly true of humanities and social science graduates. Graduates from business programs are the only group to reveal a lower frequency of reading for pleasure than the Gallup group. The third group of responses to the question of how leisure time is spent deals with visiting relatives, and it presents a problem in interpretation and comparison between the Gallup poll and our survey. As shown in Tables 7 and 8, visiting with friends and relatives ranks among the most frequently selected choices of our respondents. A similar question on the Gallup poll revealed that all 25-to-29-year-olds rank this activity very low (seventh out of eight). However, the alternative of "staying at home with the family" ranked second for the same group in the Gallup poll. This implies that our sample included in the visiting-friends item the consideration of staying home to spend time with the immediate family.

Of the eight possible choices, the national sample of 25-to-29-year-olds ranks going to the movies or theater third, whereas the men in our survey rank attending cultural events—including movies and plays—seventh, while women rank this activity fifth. Of course, it is possible that college graduates attend different types of movies and other cultural activities. Playing cards and games ranks at the bottom of the list in both surveys. Participation in sports ranks relatively low (sixth) in the Gallup poll, but male college graduates are more likely to participate in sports than women graduates and the Gallup respondents. Finally, engaging in hobbies ranks only fifth for the total group of 25-to-29-year-olds, whereas college graduates rank this activity second. It would be useful to probe further to learn about the type of hobbies pursued by college graduates and those who did not attend college.

The difference between college graduates and noncollege people in how they spend their leisure time cannot necessarily be attributed to college attendance. Perhaps if these college graduates had not attended college the differences, such as the propensity to watch television, would still be observed between them and the noncollege group.

It is sometimes argued that championing the arts and community service are two social benefits of higher education. This study of recent graduates, however, shows little support for this view. Nor is there evidence that those with certain majors, even the humanities, are substantially more supportive of the arts and community services. Consequently, there seems little justification for maintaining or increasing humanities enrollments merely because society benefits from their support for cultural activities. However, we should not advocate reducing humanities enrollments either, just because the job market is especially tight.

SATISFACTION WITH QUALITY OF LEISURE

Data on the amount of time spent in various leisure activities is really not particularly informative. College graduates may have less time than nongraduates for leisure activities because they hold jobs that require more time. Therefore, although they may want to attend cultural events more often, they may not do so because they lack the time. When they are older or retired, college graduates and the less educated may differ greatly in how they spend their leisure time.

A better measure of leisure-time activities is satisfaction with the quality of leisure time. Unfortunately, on this item we only have data on college graduates. Table 9 indicates the activities most closely associated with satisfaction with the quality of leisure activities. Those most likely to engage in hobbies or sports are most likely to be satisfied. If Table 9 is considered with Table 7, field differences in participation rates can be compared with the extent to which the activities affect satisfaction with leisure. In general, a larger proportion of humanists have hobbies and more hard scientists participate in sports. Those who spend more time watching television are

less likely to be satisfied with their leisure time. Although only a slightly smaller proportion of humanities graduates watch television, this activity ranks three or four places lower for them; humanities graduates participate in other activities more frequently. Overall, greater proportions of history graduates (44.4 percent) are very satisfied with the quality of their leisure-time activities (Table 10). Foreign-language majors (all women) are least satisfied (28.8 percent).

But field differences are not important in explaining satisfaction with the quality of leisure time. From the regression predicting satisfaction with *quality* of leisure time by factors other than how the time was spent, the best predictor is satisfaction with *quantity* of leisure time (Table 11). Therefore, if the restricted job market leaves humanities graduates with more free time, they should be more satisfied with how they spend it. Greater proportions of history and foreign-language majors are very satisfied with the amount of their leisure time, but although history majors tend to be very satisfied with the quality of their leisure, and foreign-language majors tend not to be (Table 10).

The second most important factor related to quality of leisure time is job satisfaction. For our respondents, job satisfaction was directly related to satisfaction with the quality of their leisure activities. There are two general theories that explain the relationship between job satisfaction and life satisfaction (Solmon, Bisconti and Ochsner 1977). The compensation theory argues that time away from work—leisure time—may become not only distraction from, but compensation for a worker's dissatisfaction with the job. There is greater support, however, for the "spillover" theory, which says that a worker's feelings about the job tend to generalize or spill over to other life roles. Our preliminary results support the spillover theory.

Family life is also related to satisfaction with the quality of leisure time. Single respondents and married respondents with many children tend to be less satisfied. College athletes (probably because they continue to participate in sports after graduation) and alumni of public colleges and universities (perhaps because these institutions offer more variety in extracurricular activities) are more likely to be very satisfied with the quality of their leisure activities.

In addition to the lack of differentiation by major field, there are no differences in satisfaction with quality of leisure activities by sex, employment status, income, college grade-point average, and participation in various collegiate activities.

FEELINGS ABOUT WORK AND ITS RELATIONSHIP TO OTHER ASPECTS OF LIFE

Humanists are, clearly, the least likely to agree that one's job reflects one's intellectual attainment, that the value of college education is determined by the labor market, that they will sacrifice private life for money, or that a job is a way of life (Table 12). They are more likely to feel that few jobs let a person be creative. In sum, humanities majors are more cynical about the world of work. Whether these pessimistic views are the result of, or have contributed to, the job crisis for humanities graduates remains to be determined. Clearly, hard-science and professional majors are more positive in their views of the role of work in their lives.

If humanities graduates do not expect much from a job, if work has relatively little importance in their lives, perhaps there is no need to worry about the poor job market for humanists. One problem, however, is that we do not know whether humanists' feelings about work would remain the same if the job market were better. More important, evidence shows that there are significant relationships between job attitudes and other attitudes. Dissatisfaction may spill over from the job into other life roles.

Table 13 reveals that general job satisfaction is lowest for humanities majors, followed by social-science majors. Hard-science and professional majors are most likely to be very satisfied with their jobs. Table 10 indicates that humanities majors and social-science majors are also the most dissatisfied with life in general. English majors and social-science majors have a smaller proportion than the mean for all fields in the "very satisfied" category for each aspect of life surveyed. History majors are the most satisfied of the humanists. Hard-science majors approximate the mean, and professional majors are almost always more satisfied than average. History majors are most frequently very satisfied with family life and the quality of their leisure activities; they rank high in satisfaction with other aspects of life as well. Humanists, except for history majors and social-

science majors, apparently have not found substitutes for their dissatisfying jobs. Both work and other aspects of life are relatively unsatisfactory.

Table 14 shows which factors are most often associated with life satisfaction. Satisfaction with future prospects and with family life are most closely associated with overall life satisfaction. After these factors, job satisfaction is ranked most important. That is, despite minimizing the role of work in their lives, even for the humanities majors, satisfaction with life is related to job satisfaction. Of course, we cannot infer causality from the regression. After job satisfaction, satisfaction with leisure, social life, and location are important. Married people are more satisfied than single people. In addition to the lack of differentiation by field, income, family background, sex, and type of college attended are not significantly associated with life satisfaction.

CONCLUSION

We have reported the results of one of the few studies of college impacts with a large sample of respondents which goes beyond freshman-to-senior changes, and which looks at college students several years after their graduation. Unlike previous studies, our study found that life goals that reflect alturism and political interest decline most in importance, whereas business-related goals grow most in importance. Field differences are not strong; there is little indication that humanities programs instill greater social responsibility in their graduates.

Our results are consistent with those of other studies on changes in religious preferences: Declines are greatest in the Christian religions, while increases are greatest in "other" or "no" religion. Declines in Christianity are greatest for humanities and social-science majors.

Also consistent with previous studies are our findings that college graduates are more involved in the political process than the population as a whole. However, shifts in political attitudes vary by field. From a compilation of all the attitudinal questions, several trends are clear: Hard-science, business, and education majors are the most conservative graduates, and they become more conservative after the freshman year. Social science, history, and other humanities majors are the most liberal, and they become more liberal. English and foreign-language majors tend toward liberal attitudes, but some develop more conservative views than they held as freshmen. Our data also confirm the widely held views about differences in political attitudes by field. However, our study reveals much diversity across humanities fields. When we observe attitudinal changes, these tend to reinforce existing trends. Hence, we can infer that political views are reinforced rather than modified in college, particularly for history, other humanities, social and hard-science, and professional majors. The federal programs most generally advocated by graduates are in the energy, environmental, and crime prevention areas.

Field differences occur in the amount and type of leisure-time activities. Men have more leisure time than women. Of all the majors, professional majors have the least leisure time. The most popular leisure activities are spending time with family, engaging in hobbies, sports (for men) and reading. Attending cultural events ranks surprisingly low, although humanities graduates are more likely than others to do so. Participation in community service activities ranks at the bottom for all graduates.

The most interesting finding from the comparison of our sample with the national sample of the same age group is the lower propensity of college graduates to watch television and their somewhat higher probability of spending leisure time reading and engaging in hobbies. The lower probability that college graduates will attend movies and so on needs elaboration, particularly in terms of the types of cultural activities attended by that group and a similar group that did not go to college.

Those who participate in hobbies or sports are most satisfied with the quality of their leisure time; those who watch television are least satisfied. The more leisure time graduates have, the more they tend to feel their leisure activities are of high quality. A strong positive association also appears between job satisfaction and satisfaction with leisure. Clearly, the two are complementary; they do not substitute for each other.

Humanities graduates have the lowest job satisfaction and the lowest satisfaction with life in general. It appears that the minimizing by humanists of the role of work in life reflects dissatisfaction with jobs, rather than the feeling that work is unimportant. Moreover, job dissatisfaction

is strongly related to dissatisfaction with life in general. Satisfaction with leisure is also related to general life satisfaction, but field differences in the former are not apparent. Hence, those fields with poor job markets, such as the humanities (with the possible exception of history), produce people who are generally unhappy because they are unable to substitute other gratifications for the gratifications they do not receive from work.

TABLES

Table 1. College Graduates' Changes in Values Over Time

Value Factor Item	Percentage Checking Item as "Essential" or "Very Important" 1970	1977	7-Year Change
Altruism			
Helping others who are in difficulty	61.5	48.3	—13.2
Participation in an organization like the Peace Corps or VISTA	16.6	3.4	—13.2
Artistic Interests			
Writing original works (poems, novels, short stories, and so on)	13.3	13.6	+ 0.3
Creating artistic works (painting, sculpture, decorating, and so on)	17.6	27.4	+ 9.8
Athletic Interest			
Becoming an outstanding athlete	—	—	—
Business Interest			
Being very well off financially	29.2	45.4	+16.2
Being successful in a business of my own	32.9	45.2	+12.3
Becoming an expert in finance and commerce	10.1	9.4	— 0.7
Musical Interests			
Becoming an accomplished musician	—	—	—
Becoming accomplished in one of the performing arts	12.8	10.5	— 2.3
Status Needs			
Becoming an authority on a special subject in my subject field	58.7	49.5	— 9.2
Obtaining recognition from my colleagues for contributions in my special field	30.0	41.4	+11.4
Other Values			
Keeping up to date with political affairs	53.7	32.9	—20.8
Having administrative responsibility for the work of others	12.0	30.6	+18.6
Never being obligated to people	18.2	26.3	+ 8.1
Making a theoretical contribution to science	8.6	4.5	— 4.1
Becoming a community leader	9.7	7.4	— 2.3
Developing a meaningful philosophy of life	74.7	74.7	0.0
Participating in a community action program	24.3	11.4	—12.9
Getting married within next five years	24.5	34.9	+10.4
Having an active social life	52.5	53.2	+ 0.7
Having friends with backgrounds different from mine	61.2	41.8	—19.4
Raising a family	66.5	46.2	—20.3

Table 2. Comparison of Important Life Goals, 1970 and 1977, by Major (percentages responding "very important" or "essential")

Goals	Major																	
	English		Foreign Languages		History		Other Humanities		Social Sciences		Hard Sciences		Business		Education		Total	
	1970 N=120	1977 N=119	1970 N=52	1977 N=52	1970 N=72	1977 N=72	1970 N=313	1977 N=312	1970 N=374	1977 N=372	1970 N=682	1977 N=679	1970 N=306	1977 N=304	1970 N=292	1977 N=289	1970 N=2211	1977 N=2199
Becoming accomplished in a performing art (acting, dancing)	16.7	15.1	17.3	15.4	7.0	8.3	32.6	31.8	9.6	6.4	7.5	6.9	6.6	4.6	14.4	5.9	12.8	10.5
Becoming an authority in field	59.2	43.4	48.1	34.6	58.3	37.5	58.2	58.9	57.5	52.1	60.2	47.0	59.5	56.5	57.9	43.0	58.7	49.5
Obtaining recognition from colleagues for contributions in special field	35.9	43.3	28.8	36.6	27.8	29.1	32.9	57.2	27.5	40.7	29.9	39.0	34.0	42.9	24.6	32.4	30.0	41.4
Influencing political structure	15.8	13.4	13.4	5.7	22.2	18.1	14.7	8.7	20.3	13.4	11.9	5.5	12.1	7.9	9.6	5.2	14.0	8.4
Influencing social values	36.6	29.1	23.1	22.0	33.3	34.8	35.2	30.6	36.9	31.5	23.3	21.9	23.9	17.4	29.1	34.4	29.2	26.6
Becoming an expert in finance and commerce	4.2	4.1	3.8	3.8	7.0	11.1	3.8	2.9	9.6	10.5	7.0	5.0	31.7	32.1	6.1	3.8	10.1	9.4
Having administrative responsibility for the work of others	6.6	21.6	3.8	32.6	8.3	33.3	7.9	22.6	12.3	36.9	9.7	26.0	28.4	54.7	8.6	19.5	12.0	30.6
Being very well-off financially	27.5	39.2	13.4	46.1	29.1	43.1	21.1	42.2	27.8	47.3	28.0	40.8	49.0	63.8	24.7	41.2	29.2	45.4
Helping others who are in difficulty	65.9	43.7	61.5	50.0	57.0	45.7	65.2	46.2	68.8	57.4	55.7	45.7	52.3	38.9	70.9	57.7	61.5	48.3
Participating in an organization like Peace Corps or Vista	25.9	0.9	13.4	3.8	22.3	7.0	17.3	3.5	20.8	3.7	14.3	3.5	7.9	1.3	20.9	5.2	16.6	3.4
Becoming a community leader	9.2	5.9	11.5	7.7	15.3	7.0	10.2	6.4	10.5	9.4	6.3	6.5	14.4	10.2	9.3	5.9	9.7	7.4
Making a theoretical contribution to science	4.1	0.8	1.9	2.0	4.2	2.8	4.1	0.9	6.4	4.3	16.8	10.4	6.2	1.3	3.4	0.0	6.6	4.5
Writing original works (poems, novels, short stories)	40.0	45.9	15.4	17.3	13.9	15.3	27.5	24.7	15.8	14.9	6.6	8.7	4.9	4.3	8.2	7.2	13.3	13.6
Never being obligated to people	21.7	32.5	15.3	27.0	11.1	33.3	14.7	23.6	21.1	29.4	20.0	25.4	20.3	28.1	13.0	21.0	18.2	26.3
Creating artistic work (painting, sculpture, decorating)	24.1	31.9	21.1	32.7	9.8	21.4	50.5	57.7	18.4	27.5	7.9	18.6	6.5	12.1	14.1	29.4	17.6	27.4
Keeping up to date with political affairs	59.2	35.8	46.1	26.9	69.4	56.9	54.7	35.1	63.1	42.2	50.3	26.6	46.7	29.9	51.0	30.8	53.7	32.9
Being successful in own business	25.9	40.8	15.3	35.3	34.7	47.3	31.7	54.1	29.2	47.5	30.3	39.7	53.6	58.1	29.1	42.6	32.9	45.2
Developing a meaningful philosophy of life	81.7	79.1	84.6	75.0	77.8	76.4	75.1	81.7	82.1	76.7	72.4	71.7	64.0	69.0	76.4	74.7	74.7	74.7
Participating in a community action program	28.3	9.2	26.9	9.6	23.6	7.0	23.0	10.3	31.6	18.6	21.8	9.0	18.0	7.3	27.0	14.9	24.3	11.4
Getting married within the next five years	30.0	36.3	25.0	29.7	18.1	27.8	21.7	29.3	26.0	30.5	21.7	36.6	22.2	37.1	33.9	43.5	24.5	34.9
Having an active social life	56.7	49.1	44.2	56.9	45.8	55.0	46.7	48.7	55.3	58.8	48.4	49.7	62.1	58.7	55.9	53.7	52.5	53.2
Having friends with backgrounds and interests that are different	65.0	42.5	71.2	46.1	61.2	42.3	63.9	44.2	67.4	41.2	55.5	39.9	56.9	47.8	65.0	37.1	61.2	41.8
Raising a family	65.0	42.5	78.8	45.1	59.7	42.9	63.6	40.5	64.2	38.4	61.6	46.5	71.2	52.3	79.8	57.8	66.5	46.2

Selection on white, BA, and not currently in school

Table 3. Comparison of Religious Preference, 1970 and 1977, by Major (in percentages)

Major	Religious Preference: Protestant		Roman Catholic		Jewish		Other Religions		None		N	
	1970	1977	1970	1977	1970	1977	1970	1977	1970	1977	1970	1977
English	42.4	31.9	5.0	5.9	31.7	24.4	3.3	9.2	17.5	28.6	120	119
Foreign languages	38.4	35.3	1.9	0.0	42.3	29.4	1.9	3.9	15.4	31.4	52	51
History	43.7	34.3	4.2	4.3	35.2	22.9	4.2	0.0	12.7	38.6	71	70
Other humanities	52.5	42.2	6.1	6.1	20.6	16.6	4.5	6.4	16.1	28.8	310	313
Social sciences	45.7	31.6	6.8	5.9	29.7	21.6	3.0	7.0	14.7	33.8	367	370
Hard sciences	55.4	41.9	4.3	4.0	29.2	24.7	1.6	4.6	9.6	24.9	679	676
Business	57.0	49.5	5.3	5.0	30.4	26.7	1.3	3.6	5.9	15.2	303	303
Education	61.5	54.3	5.5	5.5	26.0	23.5	3.1	6.2	3.8	10.4	289	289
All fields total	52.9	41.9	5.2	5.0	28.4	23.2	2.6	5.4	10.8	24.5	2191	2191

Selected on white, BA, and not currently in school.

Table 4. Voting Behavior, by Major (percentages responding "yes")

	Major: English N=119	Foreign Languages N=52	History N=72	Other Humanities N=313	Social Sciences N=374	Hard Sciences N=680	Business N=303	Education N=292
Currently registered to vote	84.9	88.5	95.8	85.9	88.2	84.9	86.1	87.7
Voted in last presidential election	76.5	84.6	88.9	82.1	82.1	80.0	81.5	81.2
Voted in last state election or primary	62.2	55.8	79.2	64.5	66.8	64.6	63.0	64.7
Voted in last city or county election or primary	49.6	38.5	63.9	48.6	50.8	48.5	50.5	48.3

Selected on white, BA, and not currently in school.

Table 5. Comparison of Political Views, 1970 and 1977, by Major (in percentages)

Major	N		Political Views: Far Right or Conservative		Middle-of-the-Road		Liberal or Far Left	
	1970	1977	1970	1977	1970	1977	1970	1977
English	120	118	16.7	23.7	42.5	40.7	40.8	35.6
Foreign languages	52	51	23.1	19.6	51.9	51.0	25.0	29.4
History	72	71	18.1	8.5	51.4	38.0	30.6	53.5
Other humanities	313	310	15.6	16.5	40.9	36.8	43.5	46.7
Social sciences	374	369	16.6	14.7	42.2	40.1	41.2	45.2
Hard sciences	682	678	19.2	23.9	50.4	45.0	30.3	31.1
Business	306	302	20.0	28.4	55.9	55.3	24.2	16.2
Education	292	288	17.8	24.7	58.9	59.0	23.3	16.3

Selected on white, BA, and not currently in school.

Table 6. Attitudes on Involvement of Federal Government in National Issues, by Major (percentages responding "Increase Involvement from Current Level" or "Initiate New Crash Program")

National Issues	Major							
	English (N=118)	Foreign Languages (N=49)	History (N=72)	Other Humanities (N=302)	Social Sciences (N=359)	Hard Sciences (N=670)	Business (N=296)	Education (N=280)
Control environmental pollution	80.5	81.6	88.9	82.1	85.3	73.7	64.6	79.3
Use tax incentives to control birth rate	41.4	40.8	47.9	47.7	47.7	43.2	39.2	35.2
Protect the consumer from faulty goods and services	70.9	77.5	83.3	71.4	73.6	66.3	56.4	74.9
Compensatory education for the disadvantaged	41.4	30.6	50.7	43.5	42.6	33.5	25.5	42.4
Special benefits for veterans	17.9	12.2	25.0	19.7	17.3	16.1	14.9	17.5
Control firearms	65.5	61.2	70.9	64.0	68.2	53.2	51.2	58.7
Eliminate poverty	62.1	59.2	76.4	62.8	65.2	52.4	43.1	60.7
Crime prevention	83.6	85.4	85.7	83.6	84.1	85.0	81.6	89.6
School disegregation	25.4	18.3	29.6	25.7	28.4	15.3	12.0	18.1
Compensatory financial aid for the disadvantaged	22.3	20.9	43.6	30.0	32.4	17.0	13.9	23.2
Provide birth control information, pills, devices to the general population	57.7	49.0	70.9	70.2	75.8	60.1	57.7	54.6
Develop antiballistic missile capability	15.8	8.2	18.1	12.4	11.0	18.1	25.4	12.2
Control television and newspaper news reporting	1.7	10.2	1.4	3.3	2.2	4.1	5.7	5.0
Space program	27.4	18.4	31.0	30.9	25.3	36.8	38.4	19.5
Pay off some of the national debt	39.4	44.9	39.7	48.9	42.7	50.2	51.5	45.3
Support the arts and cultural activities of the nation	53.9	55.1	56.9	64.2	48.1	39.4	28.9	43.9
Find a cure for cancer	72.2	66.7	83.3	72.4	76.8	67.6	73.8	81.8
Explore new energy sources	93.1	91.9	98.6	96.0	98.9	95.8	93.0	93.2

Selected on white, BA, and not currently in school.

Table 7. Ranking of Leisure Time Activities, by Sex and Major

Activities	Major: English		Foreign Languages		History		Other Humanities		Social Sciences		Hard Sciences		Business		Education		Total Sample percentages		Total Sample ranking	
	Male N=29	Female N=91	Male N=1	Female N=51	Male N=37	Female N=35	Male N=182	Female N=289	Male N=143	Female N=230	Male N=354	Female N=327	Male N=220	Female N=82	Male N=48	Female N=244	Male	Female	Male	Female
Attend cultural events (movies, plays, concerts, ballets, museum)	5	6	*	6	4	8	4	6	7	7	9	7	10	9	10	8	29.2	39.4	8	7
Participate in community meetings (political clubs, League of Women Voters, city council)	16	18	*	18	17	17	17	18	15	17	17	19	19	18	16	17	2.3	2.2	19	18
Participate in service clubs (Rotary, Kiwanis)	16	17	*	19	19	16	19	19	19	19	16	18	14	16	18	17	3.5	2.0	16	19
Pajrticipate in religious activities	15	11	*	14	10	13	10	9	12	14	12	10	12	10	10	10	17.0	20.7	12	11
Participate in sports	8	9	*	12	6	9	9	9	5	9	4	9	2	7	4	9	45.5	27.7	4	9
Participate in children's clubs, school activities (4-H, PTA, Scouts, Little League)	14	16	*	17	14	16	17	17	17	17	17	17	16	18	13	13	3.5	5.7	16	16
Participate in other volunteer work	16	15	*	16	16	13	16	16	15	15	16	15	18	15	16	16	3.0	5.8	18	15
Visit friends and/or relatives	1	2	*	2	1	3	3	3	2	2	3	2	3	2	2	2	55.7	70.4	2	2
Engage in favorite hobbies	1	4	*	4	5	4	1	2	3	5	2	4	4	4	3	4	51.9	59.9	3	4
Read for pleasure	3	3	*	3	3	1	5	4	4	3	5	5	6	6	5	5	40.9	59.4	5	5
Read to improve yourself	6	7	*	9	7	6	6	7	9	8	7	8	8	11	7	7	31.7	37.0	7	8
Work at a second job	13	19	*	15	14	17	12	15	14	16	15	16	15	17	15	16	6.3	4.2	14	17
Attend classes for fun	16	14	*	10	17	15	15	13	18	13	14	13	17	14	18	14	4.2	14.0	15	14
Attend classes for self-improvement and/or career advancement	12	13	*	11	12	12	14	12	13	12	13	14	13	13	13	15	9.6	14.6	13	13
Travel	7	9	*	7	12	4	11	11	10	10	10	11	9	12	10	12	23.4	22.6	10	10
Play cards, other games	11	12	*	13	11	10	13	14	11	11	11	12	7	8	8	11	22.0	19.8	11	12
Take care of personal business (grocery shopping, car maintenance, banking, housework)	4	1	*	1	2	2	2	1	1	1	1	1	1	1	1	1	64.1	83.8	1	1
Cook	9	5	*	5	8	7	7	5	7	4	8	3	11	3	9	3	26.7	60.3	9	3
Watch television	9	8	*	8	8	5	8	8	6	6	6	6	5	5	5	6	38.5	41.8	6	6

*Fewer than 10 observations
Selected on white, BA, and not currently in school

Table 8. Ranking of Favorite Ways to Spend an Evening and Frequency of Participation in Leisure-Time Activities*

	Gallup						College Graduates Survey in 1977									
Activities	National Ranking	Adjusted Ranking	25-29 Year-Olds	White	High School Graduates	College Graduates	English	Foreign Languages	History	Other Humanities	Social Sciences	Hard Sciences	Business	Economics	Total Male	Total Female
Watch television	1	1	1	1	1	2	6	5	6	6	4	4	4	4	5	4
Reading	2	2	4	2	2	1										
Reading for pleasure							2	2	1	3	2	3	5	3	4	3
Reading to improve self							5	7	5	5	6	6	7	5	6	6
Home with family	3	3	2	3	2	3										
Visiting friends/relatives	10	5	7	5	5	5	1	1	2	2	1	1	1	1	1	1
Attend cultural events (movies, plays, concerts, ballets, museums)							4	4	4	4	5	7	8	7	7	5
Movies/theaters	7	4	3	4	4	4										
Play cards/games	11	6	8	5	2	8	8	8	8	8	8	8	6	8	8	8
Participate in sports	12	7	6	8	5	5	7	6	7	7	7	5	2	6	3	7
Engage in favorite hobbies							3	3	3	1	3	2	3	2	2	2
Indoor hobbies	14	8	5	5	9	7										

Selected on white, BA, and not currently in school

"Frequency" from College Graduates Survey in 1977

Table 9. Activities Associated with Satisfaction with Quality of Leisure-Time Activities

Variables	Simple Correlation	Beta When Entered	Beta in Final Step
Extent engage in favorite hobbies	.263*	.263*	.218*
Extent participate in sports	.192*	.167*	.162*
Extent watch television	—.095	—.101*	—.108*
Extent travel	.138	.078*	.064*
Extent cook	.088	.071*	.061*
Extent visit friends and/or relations	.135	.062*	.059*
Extent participate in community meetings	.059	.050*	.047*
Extent participate in religious activities	.037	.042*	.042*

*Significant at $p \leq .05$ level

$R^2 = .125$

$F = 35.49816^*$; Df = 8;1983

Variables which did not enter	Simple Correlation
Extent attend cultural events	.104
Extent participate in service clubs	.010
Extent participate in children's clubs, school	.039
Extent participate in other volunteer work	.092
Extent read for pleasure	.090
Extent read to improve self	.074
Extent work at a second job	—.019
Extent attend classes for fun	.083
Extent attend classes for self-improvement	.056
Extent play cards, other games	.078
Extent take care of personal business	.042

Selected on white, BA, and not currently in school

Table 10. Satisfaction with Various Aspects of Life, by Major (percentages responding "very satisfied")

Various Aspects of Life	Total N=2204	Major: English N=120	Foreign Languages N=52	History N=72	Other Humanities N=313	Social Sciences N=371	Hard Sciences N=680	Business N=305	Education N=291
Life in general	47.8	33.3	42.3	44.4	47.3	38.8	49.4	57.0	54.0
Family life	54.4	52.5	53.8	62.9	57.7	44.6	53.8	60.3	57.0
Quality of leisure-time activities	35.2	31.9	28.8	44.4	38.1	32.9	34.4	35.3	36.9
Amount of time for leisure activities	30.6	27.5	36.5	36.1	31.4	29.6	26.4	29.4	40.9
Town where live	38.1	28.3	36.5	43.7	39.7	32.9	36.5	45.6	41.6
Geographic area where live	51.0	40.0	51.9	54.9	52.6	47.3	50.1	57.8	52.6
Climate where live	42.0	32.5	48.1	45.1	46.3	39.2	42.7	42.5	40.9
Social life	28.2	26.9	32.7	32.4	29.4	27.8	26.5	28.4	30.2
Future prospects	39.4	35.0	36.5	33.3	42.9	31.6	40.6	45.2	40.0

Selected on white, BA, and not currently in school

Table 11. Predicting Satisfaction with Quality of Leisure-Time Activities

Variable	Simple Correlation	Beta When Entered	Beta in Final Step
Satisfaction with amount of time for leisure activities	.311*	.311*	.302*
General job satisfaction	.113	.087*	.083*
Participated in athletics in college	.077	.072*	.079*
Public institution	.052	.058*	.060*
Single	—.051	—.057*	—.072*
Number of children	—.035	—.047*	—.047*

*Significant at $p \leq .05$ level
$R^2 = .118$
$F = 44.25059^*$ Df = 6;1985

Variables which did not enter

Variable	Simple Correlation
Married	.044
Income	.012
Full-time employed	—.015
Part-time employed	—.002
Sex	.015
Total full-time equivalent enrollment	.036
Selectivity	.018
English major	—.030
Foreign language major	—.023
History major	.023
Other humanities major	.007
Social science major	—.037
Hard science major	—.007
Business major	.025
Participated in cultural activities in college	.021
Participated in social activities in college	.017
Participated in political activities in college	.007
Participated in religious activities in college	—.004
Participated in communications activities in college	.000
Participated in academic activities in college	.009
Grade point average as undergraduate	—.007
Worked while in college	—.018

Selected on white, BA, and not currently in school

Table 13: General Job Satisfaction, by Major and Sex (in percentages)

Degree of Satisfaction	Major															
	English		Foreign Languages		History		Other Humanities		Social Sciences		Hard Sciences		Business		Education	
	Males N=29	Females N=89	Males N=1	Females N=49	Males N=35	Females N=34	Males N=183	Females N=285	Males N=139	Females N=229	Males N=348	Females N=324	Males N=221	Females N=81	Males N=47	Females N=240
Not satisfied	37.9	25.8	*	26.5	28.6	23.5	20.4	24.9	20.9	27.1	14.4	13.3	16.7	12.3	29.8	15.8
Somewhat satisfied	44.8	50.6	*	40.8	45.7	47.1	38.8	42.0	41.7	41.5	45.1	44.4	38.9	44.4	25.5	44.6
Very satisfied	17.2	23.6	*	32.7	25.7	29.4	40.8	33.2	37.4	31.4	40.5	42.3	44.3	43.2	44.7	39.6

*Fewer than 10 observations

Selected on white, BA, and not currently in school

Table 12. Attitudes on Various Issues, by Major (percentages responding "agree somewhat" and "agree strongly")

Issue	Major								
	English N=120	Foreign Languages N=52	History N=69	Other Humanities N=311	Social Sciences N=371	Hard Sciences N=681	Business N=304	Education N=292	Total N=2200
An individual's intellectual attainment is reflected by the job he/she holds	17.5	19.2	21.1	20.8	21.0	26.3	34.8	30.3	25.4
The value of college education is determined by the labor market	51.7	65.4	50.0	45.8	49.9	54.7	64.8	66.8	55.0
Few jobs let a person be creative	70.6	58.8	73.9	69.8	67.2	62.8	53.1	54.9	62.8
Private life will not be sacrificed to make money	87.5	92.3	88.8	88.3	84.2	82.5	77.0	85.9	84.0
Job is a way of making a living, not a way of life	69.8	57.7	68.6	54.7	61.6	59.5	65.1	58.8	60.7

Selected on white, BA, and not currently in school

Table 14. Predicting Satisfaction with Life in General

Variable	Simple Correlation	Beta When Entered	Beta in Final Step
Satisfaction with future prospects	.495	.495	.227
Satisfaction with family life	.477	.362	.268
Satisfaction with quality of leisure time activities	.389	.204	.154
General job satisfaction	.380	.201	.197
Satisfaction with social life	.421	.124	.106
Satisfaction with geographic area where live	.213	.066	.066
Satisfaction with amount of time for leisure activities	.191	.041	.045
Married	.222	.048	.048

All simple correlations and betas are significant at $p \leq .05$ level.

$R^2 = .453$

$F = 199.02571$

$DF = 8;1922$

Variables which did not enter

Variable	Simple Correlation
Satisfaction with town in which live	.219
Satisfaction with climate where live	.157
Income	.089
Sex	.065
Major fields	
Single	—.218
Parental income	.018
Selectivity of institution	—.015

Selected on white, BA, and not currently in school

APPENDIX

In assessing the impacts of college, several approaches are possible. The method a researcher chooses often depends on the available data. The simplest and perhaps most naive approach is to analyze responses of college graduates at some time after graduation. This descriptive method allows the researcher to assess the behavior and attitudes of college graduates. This posttest approach, for instance, indicates whether humanities majors, compared with graduates of other fields, differ in political attitudes, participate more or less frequently in leisure-time activities, or differ in satisfaction with life. A second method allows the researcher to compare the attitudes and behaviors of college students when they were freshmen, again when they were juniors or seniors, and finally, sometime after graduation. A more rigorous method of assessing the impacts of college is to compare the attitudes and behaviors of graduates from various two- and four-year programs with similar groups of college dropouts and non-college attenders at several points in time. According to Astin (1977), however, this approach is problematical; the real issue is the impact of different college experiences rather than the number of years spent in college. Because the variety of intracollege experiences is so great, it would be meaningless to compare college students with people who did not attend college. Instead, researchers should focus on the effects of attending a private versus a public, a two-year versus a four-year, or a sectarian versus a nonsectarian college.

The present study, utilizing method two, analyses the responses of college graduates who were freshmen in 1970. To make comparisons with two-year college graduates, dropouts, and non-college attenders, a recent Gallup poll and several college impact studies were reviewed (Gallup 1976; Withey 1971; Trent and Medsker 1968; Hyman et al. 1975; Feldman and Newcomb 1969; Astin 1977; Solmon, Bisconti, and Ochsner 1977). Of course, there are always problems in making comparisons from different samples; for example, the instruments may not be comparable. If earlier trends are not supported by this study, we cannot determine whether the lack of congruence is attributable to sampling differences, instrument differences, or true differences. However, if earlier evidence is supported, we can be reasonably certain of the findings.

Another problem is that, even if we were to observe differences between individuals who did and did not attend college, it is difficult to attribute these differences to college attendance. If the graduates had not attended college, their responses could still be different from those of people who actually did not attend. Longitudinal data is required to discern the impact of college attendance. By looking at changes in behavior and attitudes for the same individuals between the time they first enrolled in college and three years after graduation, we can infer that at least part of the observed difference is a function of the college experience. For many responses to questions in the 1977 post-test survey, we have pre-test responses to similar questions from the same people when they first entered college in 1970.

Of course, it is still not possible to attribute changes over time completely to college effects. Had the individuals not attended college, their attitudes and behaviors might have changed anyway, because of maturation. Today the respondents are seven years older than they were when first surveyed, and other people might behave differently than younger people. Also, the posttest survey was administered three years after the individuals graduated from college. It might be that no changes occurred during the four college years, but that changes did occur during the two or three years after college. Various experiences, such as marriage, might have caused changes in attitudes and behaviors.

Lacking in most college-impact literature are comparisons among students with different major fields. We know there are significant differences between fields in terms of career-related college outcomes (Bisconti and Solmon 1976, 1977; Solmon, Bisconti, and Ochsner 1977), but little attention has been given to field differences in nonwork outcomes. Consequently, a major focus of this study is on comparing attitudes and values of humanities (English, foreign languages, history, and others, such as fine arts, music, and philosophy), social science, hard science, and professional (business and education) majors. In comparing the attitudes and values of people in various major fields, we must consider that these people may have had different attitudes initially and, therefore, chose the field most aligned with their beliefs. In other words, there may be a self-selection process at work similar to the one described by Feldman and Newcomb (1969) for college atmosphere. Feldman and Newcomb called it an accentuating process whereby "those characteristics in which freshman-to-senior change is distinctive for a given college will also have been distinctive for its entering freshmen, initial distinctiveness being in the same direction as subsequent change" (p. 328).

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Lewis C. Solmon
Nancy L. Ochsner
Higher Education Research Institute
924 Westwood Blvd.
Los Angeles, CA 90024

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